FORM PTO-1390 (REV 11-98)   U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	ATTORNEY'S DOCKET NUMBER S004-4285(PCT) U S APPLICATION NO. (If known, see 37 CFR 1 5) 09/830382

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/JP99/06122	02 Nov 1999(02.11.99)	05 Nov 1998(05.11.98)

TITLE OF INVENTION
NETWORK SYSTEM

APPLICANT(S) FOR DO/EO/US
Toshio DOI et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information

1. [X] This is a **FIRST** submission of items concerning a filing under 35 U S.C 371.
2. [ ] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S C. 371.
3. [X] This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1)
4. [X] A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. [X] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [ ] is transmitted herewith (required only if not transmitted by the International Bureau).
   b. [X] has been transmitted by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
6. [X] A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. [ ] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [ ] have been transmitted by the International Bureau.
   c. [ ] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [ ] have not been made and will not be made.
8. [ ] A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. [ ] An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. [ ] A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. [ ] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. [ ] An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. [ ] A FIRST preliminary amendment.
    [ ] A SECOND or SUBSEQUENT preliminary amendment.
14. [ ] A substitute specification.
15. [ ] A change of power of attorney and/or address letter.
16. [X] Other items or information:
    Request
    PCT/1B/301
    PCT/1B/308
    Patent Cover Page
    PCT/ISA/210
    PCT/1B/332

U.S. APPLICATION NO (if known, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO	ATTORNEY'S DOCKET NUMBER
09/830382	PCT/JP99/06122	S004-4285(PCT)

17. [x] The following fees are submitted:

	CALCULATIONS	PTO USE ONLY
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):		
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO $970.00		
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO $840.00		
International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO $760.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) $670.00		
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) $96.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$ 860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	6 - 20 =	0	X $18.00	$	
Independent claims	1 - 3 =	0	X $78.00	$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ $260.00	$ 270.00	
TOTAL OF ABOVE CALCULATIONS =				$ 1130.00	
Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also by filed (Note 37 CFR 1.9, 1.27, 1.28).				$	
SUBTOTAL =				$ 1130.00	
Processing fee of **$130.00** for furnishing the English translation later than [ ] 20 [ ] 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$	
TOTAL NATIONAL FEE =				$ 1130.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +				$	
TOTAL FEES ENCLOSED =				$ 1130.00	
				Amount to be: refunded	$
				charged	$

a. [x] A check in the amount of $ 1130.00 to cover the above fees is enclosed.

b. [ ] Please charge my Deposit Account No. ______________ in the amount of $______________ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [x] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 01-0268. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO

Bruce L. Adams, Esq.
Adams & Wilks
50 Broadway-31st Fl.
New York, NY 10004

SIGNATURE

Bruce L. Adams
NAME

25,386
REGISTRATION NUMBER

09/830382

JC03 Rec'd PCT/PTO 25 APR 2001

Re: New patent application of Toshio DOI et al.

for NETWORK SYSTEM

comprising transmittal letter, title, specification (pgs. 1-20), 6 claims (pg.20), abstract of the disclosure (pg.21), 3 sheets of formal drawings containing thereon Figs. 1-3, Request, Forms PCT/1B/301, PCT/1B/308, PCT/ISA/210 and PCT/1B/332, Patent Cover Page, express mail certification and check in the amount $1130.00

Attorney's Docket No: S004-4285(PCT)

EXPRESS MAIL CERTIFICATION UNDER 37 CFR §1.10

Express Mail Tracking Number: **EH 332 188 535 US**

Date of Deposit: **April 25, 2001**

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to Box PCT, ASSISTANT COMMISSIONER OF PATENTS, Washington, DC 20231.

Michael Ruas

MICHAEL RUAS

Network System

BACKGROUND OF THE INVENTION

The present invention relates to a network system for connecting multiple LANs (Local Area Network).

Conventionally, network systems have been introduced in various fields as communication technology has developed. For example, in the field of workpiece observation using a charged particle beam created from an electron source or an ion source, or of a charged particle beam apparatus for carrying out microfabrication processing, a system using a network is being proposed.

Fig. 3 is a block diagram of a related focused ion beam apparatus (FIB), a kind of charged particle ion beam apparatus. Fig. 3 shows that a device-side LAN 301 comprising a focused ion beam apparatus with a LAN is installed in a measurement room separately located from the factory and is LAN connected to a factory-side LAN 309 via TCP/IP (Transmission Control Protocol/Internet Protocol).

The device-side LAN 301 is equipped with a host computer 302 for performing input of instructions when carrying out processing such as observing or working of the workpiece, analysis of collected data, or display of workpiece images. In addition, as processing elements, this LAN 301 has an optical system controller 303 for controlling focusing and

magnification of an ion beam with an electric field by controlling a condenser lens and a scanning electrode, an optical axis controller 304 for axially aligning an ion source mounted on an ion source stage and positionally aligning a moveable aperture by using an actuator, a vacuum evacuation unit 305 for evacuating the workpiece room where the workpiece is mounted, a workpiece stage 306 for moving the mounted workpiece to the irradiating position of the beam, and a workpiece conveying apparatus 307 for conveying the workpiece to the workpiece stage 306. Further, the host computer 302 is connected to a storage device 310 for storing various data such as image data of the workpiece. Each processing element has a central processing unit (CPU) and is connected to a bus line 308 together with the host computer 302, and these are connected to the CSMA/CD system LANs using TCP/IP. The host computer 302 and each processing element 303 ~ 307 are individually assigned a unique identity (ID) code. The signal exchanged between the host computer 302 and each processing element 303~307 via the bus line 308 is structured to include the ID code, and the destination of the signal is determined by the ID code of the signal on the bus line 308. In the above structured focused beam apparatus, the host computer 302 and each structural element determine, by using the ID code, whether the signal on the bus line 308 is its own.

When it recognizes its own signal, it responds and processes the signal, and when processing completes, outputs a signal including the ID code of the structural element that will be responsible for the next step on to the bus line 308. Therefore, this system processes observing and working of the workpiece, and data such as image data of the workpiece is stored in the storage device 310.

In the previously mentioned related network system, because the device-side LAN 301 is a part of the factory-side LAN 309, the device-side LAN 301 and the factory-side LAN 309 influence each other causing various problems.

In other words, when the number of accesses from the factory-side LAN 309 to the device-side LAN 301 or apparatuses connected to the factory-side LAN 309 increases, the traffic on the bus line 308 increases and the data transfer efficiency within the device-side LAN 301 slows down. On the other hand, the number of accesses from the device-side LAN 301 to the factory-side LAN 309 increases, and the data transfer efficiency within the device-side LAN 301 also slows down. Further, specifications such as transfer speed and settings such as IP address (Internet Protocol Address) in the device-side LAN 301 are limited by, for example, specifications of the factory-side LAN 309, thus preventing independent specification setting.

Meanwhile, as there is mutually free access between the device-side LAN 301 and the factory-side LAN 309, a third party can intrude into the device-side LAN 301 from the factory-side LAN 309 or vice versa, causing the possibility of confidential information leakage in both the device-side LAN 301 and the factory-side LAN 309.

In addition, as there is a possibility of mutual infiltration between the device-side LAN 301 and the factory-side LAN 309, the device-side LAN 301 cannot be remotely supported by the service center connected with a communication line.

It is also possible to have the same problem when multiple LANs other than the device-side LAN 301 and the factory-side LAN 309 are connected.

The present invention is intended to provide a network system connecting multiple LANs, in which multiple LANs do not influence each other , and the shared data are still accessible from these multiple LANs.

In addition, the present invention also maintains confidentiality while solving the previous problem.

Further, this present invention provides a network system performing maintenance by remote operation as well as solving the previous problems.

SUMMARY OF THE INVENTION

The network system of the present invention is equipped with the first LAN, the second LAN, and separation means and memory means connected between the first and second LANs, and the separation means separates the first and the second LAN so that they do not influence each other and controls accessibility to the memory means from both the first and second LANs. The separation means separates the first and the second LAN so that they do not influence each other and controls accessibility to the memory means from the both first and second LANs.

The separation means can be structured to have changeable settings so that the second LAN can be accessed from the first LAN.

Also, the first LAN can be a factory-side LAN and the second LAN can be a device-side LAN.

Further, the second LAN can be connected to the service center supporting the second LAN through a communication line.

In addition, the second LAN can be a LAN comprising manufacturing apparatus, inspection apparatus, or charged particle beam apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram of a first embodiment of this invention.

Fig. 2 is a block diagram of a second embodiment of this invention.

Fig. 3 is a block diagram of a network system using a related focused ion beam apparatus.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Fig. 1 is a block diagram of a network system of a first embodiment of this invention, describing an example in which a device-side LAN is a focused ion beam apparatus (FIB), a kind of a charged particle beam apparatus.

In Fig. 1, a device-side LAN 101 as a second LAN comprising a focused ion beam apparatus is installed in the measurement room located separately from the factory and is connected to a factory-side LAN 109 as a first LAN via TCP/IP through a separation means 110 separating the device side LAN 101 and the factory-side LAN 109, so that the two LANs do not influence each other. The factory-side LAN 109 is not described in detail but connects, for example, computers via bus lines.

The device-side LAN 101 is equipped with a host computer 102 for input instructions for processing such as observing and working of the workpiece, analysis of collected data, or display of workpiece images. In addition, as processing elements, this LAN 101 has an optical system controller 103 for controlling focusing and magnification by controlling a condenser lens, a beam blanking electrode, or a scanning

electrode to control an ion beam with an electric field, an optical axis controller 104 for axially aligning an ion source mounted on an ion source stage by using an actuator and piezoelectric element, a vacuum evacuation unit 105 for evacuating the workpiece room where the workpiece is mounted, a workpiece stage 106 for moving the mounted workpiece to the irradiating position of the beam, and a workpiece conveying apparatus 107 for conveying the workpiece to the workpiece stage 106. The essential processing elements making up a charged particle beam device are the optical system controller 103 and the vacuum evacuation unit 105, and the other processing elements are used when needed.

Each processing unit has a central processing unit (CPU) and is connected to a bus line 108 together with the host computer 102, and these are connected to the CSMA/CD system LANs using TCP/IP. The host computer 102 and the each processing element 103～107 is individually given a unique identity (ID) code. The signal exchanged between the host computer 102 and the each processing element 103～107 via the bus line 108 is structured to include the ID code, and the destination of the signal is determined by the ID code of the signal on the bus line 108. The host computer 102 is connected to a storage device 119 for storing various items of confidential data. Also, the host computer 102 is connected to a service center remotely

supporting the device-side LAN 101 through a dedicated line 120 as a communicate line.

On the other hand, a separation means 110 is made from a computer consisting of a CPU 111, a display 112, a memory 113 storing a program for the CPU 111, an input device such as a keyboard 114, a dedicated path 115, and network cards 116 and 117. The path 115 is connected to a device-side LAN 101 and a factory-side LAN 109 via the network cards 116 and 117. Further, the path 115 is connected to a storage device 118 as a storing means for storing shared data requiring no confidentiality.

The separation means 110 is so that there is no mutual influence between the device-side LAN 101 and the factory-side LAN 109, and while it prevents access from the device-side LAN 101 to the factory-side LAN 109 and access from the factory-side LAN 109 to the device-side LAN 101, it enables access to the storage device 118 from both the device-side LAN 101 and the factory-side LAN 109. In other words, the network cards 116 and 117 can individually transmit a signal in one direction, and although it is possible to access from the device-side LAN 101 to the storage device 118 through the network card 117 and the path 115, it is not possible to access from the device-side LAN 101 to the factory-side LAN 109 through the network card 116. In addition, although it is possible to access from the factory-side LAN 109 to the storage

device 118 through the network card 116 and the path 115, it is not possible to access from the factory-side LAN 109 to the device-side LAN 101 through the network card 117. However, the separation means 110 is configured so that its setting can be changed by a person with a special authority operating the input device 114 so that both the device-side LAN 101 and the factory-side LAN 109 can be mutually accessible.

The operation of the above structured network system is explained in the following.
First, as an example of operation of the device-side LAN 101, in a case of an operation for conveying a workpiece to the workpiece room and setting it at the prescribed position, an operator first inputs an instruction signal for setting a workpiece, in the host computer 102.
Then, the host computer 102 responds to the instruction input and outputs an instruction signal including the ID code of the vacuum evacuation unit 105 to the bus line 108.
The vacuum evacuation unit 105 receives the instruction signal sent to the bus line 108 from the host computer 102, determines the ID code included in the signal, identifies the instruction signal as its own, responds to the signal to fill a preliminary workpiece room with air, and opens the door of the preliminary workpiece room. After the above process is completed, the vacuum evacuation unit 105 outputs a signal with the ID code

of the workpiece conveying apparatus 107 to the bus line 108 in order to transfer processing to the workpiece conveying apparatus 107 which will handle the next step.The workpiece conveying apparatus 107 receives the instruction signal sent to the bus line 108 from the vacuum evacuation unit 105, determines the ID code included in the signal, identifies the instruction signal as its own, and responds to the signal to convey the workpiece to the preliminary workpiece room. After the above process is completed, the workpiece conveying apparatus 107 outputs a signal with the ID code of the vacuum evacuation unit 105 that will handle the next process step to the bus line 108.

Thereafter, as described above, each structural element determines, using the ID code, whether the signal on the bus line 108 is its own. When it recognizes its own signal, it processes the signal and after completion of the process outputs a signal including the ID code of the structural element handling the next step to the bus line 108.

In short, when the workpiece conveying apparatus 107 completes the process and a signal including the ID code of the vacuum evacuation unit 105 is output to the bus line 108, the vacuum evacuation unit 105 responds to the signal to evacuate the preliminary workpiece room, and after completion of the process outputs a signal including the ID code of the optical system controller 103 to the bus line 108.

The optical system controller 103 receives the signal from the vacuum evacuation unit 105 and controls a high voltage for the optical system controller in the workpiece room so as to put it in the off condition preventing the high voltage from being discharged in the event of vacuum deterioration, and after completion of the process outputs a signal including the ID code of the vacuum evacuation unit 105 to the bus line 108.

The vacuum evacuation unit 105 receives the signal from the optical system controller 103, releases a valve between the workpiece room and the preliminary workpiece room to connects these rooms, and after completion of the process outputs a signal including the ID code of the workpiece stage 106 to the bus line 108.

After receiving the signal from the vacuum evacuation unit 105, the workpiece stage 106 moves to the transferring position of the workpiece, and after completion of the process outputs a signal including the ID code of the workpiece conveying apparatus 107 to the bus line 108.

After receiving the signal from the workpiece stage 106, the workpiece conveying apparatus 107 transfers the workpiece from the preliminary workpiece room to the workpiece stage 106 in the workpiece room, and after completion of the process outputs a signal including the ID code of the workpiece stage 106 to the bus line 108.

After receiving the signal from the workpiece conveying apparatus 107, a workpiece stage 106 moves, and the workpiece is transferred to the irradiating position of the ion beam. After completion of the transferring process, the workpiece stage 106 outputs a signal including the ID code of the vacuum evacuation unit 105 to the bus line 108.

Next, the vacuum evacuation unit 105 receives the signal from the workpiece stage 106, and the valve between the workpiece room and the preliminary workpiece room is closed to separate the workpiece room and the preliminary workpiece room. After completion of the valve closing process, the vacuum evacuation unit 105 outputs a signal including the ID code of the optical system controller 103 to the bus line 108.

Lastly, the optical system controller 103 receives the signal from the vacuum evacuation unit 105, recovers the high voltage for the optical system controller in the workpiece room, and outputs a signal including the ID code of the host computer 102 to the bus line 120. This completes the processing sequence for workpiece conveying.

The above set workpiece is scanned with an ion beam producing secondary electrons detected by a secondary electron detector, and data such as display data of the workpiece are collected. When the collected data is confidential, it is stored in the storage device 119, whereas when the collected data is not confidential, it is stored in the storage device

118 to which the factory-side LAN 109 has access. The host computer 102 and each processing element 103~107 distribute the processing, as in the above described system.

In the device-side LAN 101, when accessing data stored in the storage device 118, it has to go through from the host computer 102 to the bus line 108, the network card 117 and the bus line 115 of the separation means 110, and this data is used for various processing such as image analysis by the host computer 102.

In addition, in the factory-side LAN 109, when accessing data stored in the storage device 118, it has to go from the factory-side LAN 109 to the network card 116 and the bus line 115 of the separation means 110, and this data is used, for example, in manufacturing processes in the factory-side LAN 109. In this case, because the device-side LAN 101 and the factory-side LAN 109 are mutually separated by the separation means 110, the device-side LAN 101 and the factory-side LAN do not influence each other, thus maintaining confidentiality between the two.

On the other hand, when the device-side LAN 101 is remotely supported by the service center, the host computer 102 is accessed through the dedicated line 120. In this case, because the factory-side LAN 109 is separated from the device-side LAN 101 by the separation means 110 and is not to be accessed from the service center, the device-side LAN 101 can be supported

while maintaining confidentiality of data, etc. in the factory-side LAN.

However, in the event that the device-side LAN 101 has to be directly accessed from the factory-side LAN 109, such as when confidential data stored in the storage device 119 have to be accessed from the factory-side LAN or when the device-side LAN 101 has to be supported from the factory-side LAN 109, the device-side LAN 101 can be accessed from the factory-side LAN 109 through the network card 116, the path 115, and the network card 117 of the separation means 110 by a person with special authority operating the input device 114 to change the settings of the separation means 110. On the other hand, in the event that the factory-side LAN 109 has to be directly accessed from the device side LAN 101, as previously mentioned, by operating the input device 114 to change the settings of the separation means 110, the factory-side LAN 109 can be accessed from the device-side LAN 101 through the network card 117, the path 115, and the network card 116 of the separation means 110.

Fig. 2 is a block diagram of a second embodiment of the present invention, showing an example of using a manufacturing apparatus as the device-side LAN in the Fig. 1. Incidentally, since the structure and the connection relationship of the separation means 110 and the factory-side LAN 109 as a first

LAN is the same as that in Fig. 1, description thereof is omitted.

In Fig. 2, the device-side LAN 201 as a second LAN comprising a machine tool is equipped with a host computer 202 for performing input of various instructions as well as functioning as a sequencer, and comprises, as processing elements, a detector 203 for carrying out image recognition processing by CCD (Charge Coupled Device), a controller 204 for carrying out alignment of a workpiece and performing work processing, for example, and a drive controller 205 for performing drive processing of a processing tool, such as a drill.

As in the first embodiment, each processing element 203～205 has a central processing unit (CPU) and is connected to a bus line 206 together with the host computer. These are connected by the CSMA/CD system LANs using TCP/IP to the factory-side LAN 109 through the separation means 110. The host computer 202 is configured to connect to the service center through a dedicated line 207 as a communication line.

Additionally, as in the first embodiment, the host computer 202 and each processing element 203～205 are individually assigned a unique identity (ID) code. The signals exchanged between the host computer 202 and each processing element 203～205 via a bus line 206 are configured to include the ID code. It is further configured that by determining the ID code

included in the signal on the bus line 206 as its own, the host computer and each processing element perform distributed processing and work processing for the workpiece.

Also in the second embodiment, because the device-side LAN 201 and the factory-side LAN 109 are mutually separated by the separation means 110, the device-side LAN 201 and the factory-side LAN do not influence each other, thus keeping confidentiality between the two.

Additionally, when the service center remotely supports the device-side LAN 201, because the factory-side LAN 109 is not accessed from the service center, it is possible to maintain confidentiality of data, etc in the factory-side LAN 109.

Incidentally, the second embodiment shows an example of the manufacturing apparatus as the device-side LAN 201, but it is also possible to make various changes such as using a data processing apparatus as a host computer 202 as well as constructing inspection apparatus by appropriately selecting each structural element 202～205. In general, as an inspection apparatus has more processing data than a manufacturing apparatus, distribution of processing is more effective when configuring an inspection apparatus in a device-side LAN.

As previously mentioned in each embodiment, in a network system connecting multiple LANs, it is possible to prevent mutual influence between LANs.

Therefore, it is possible to prevent deterioration of the data transfer efficiency in the device-side LAN 101 and 202 due to the influence of the factory-side LAN 109. On the other hand, it is possible to prevent deterioration of the data transfer efficiency in the factory-side LAN 109 due to the influence of the device-side LAN 101 and 202.

Moreover, specifications such as transfer speed or settings such as IP address in the device-side LAN 101 and 201 can be readily carried out.

Additionally, it is advantageous that the confidentiality of the device-side LAN 101 and 201 as well as the factory-side LAN 109 can be maintained.

Furthermore, while maintaining the confidentiality, it is possible to remotely support the device-side LAN 101 and 201 from the service center via dedicated lines 120 and 207.

Incidentally, each embodiment shows an example of a charged particle beam device, a manufacturing apparatus, and an inspection apparatus as the device-side LAN 101 and 201, but it is also possible to apply this to other LAN structured apparatuses. As for the factory-side LAN 109, other LANs can also be used.

Also, although the device-side LAN 101 and 201 are supported through a dedicated wire line, these can be supported by a radio communication line.

Further, although an example of inspection is explained as one example of the support of the device-side LAN 101 and 201, it is also possible to perform monitoring of the device-side LAN or upgrading of software used in the device-side LAN 101 and 201.

Furthermore, from the device-side LAN 101 and 201, their operation activities can be periodically transmitted to the service center by e-mail or facsimile through a communication line.

In addition, although the separation 110 is comprised of one computer, it is possible for a computer connected to the device-side LAN 101 and 201 and a computer connected to the factory-side LAN 109 to be mutually path connected, and a storage device storing their shared data can be connected to this path.

Additionally, a router or an intelligent hub, for example, can be used as a separation means.

Moreover, each LAN can be configured not only by electric cables but also by optical fibers.

The present invention can prevent LANs from influencing each other in a network system connecting multiple LANs.

Additionally, while preventing influence between LANs, it is possible to maintain confidentiality in a network system connecting multiple LANs.

Further, while maintaining confidentiality, it is possible to remotely support LANs.

What is claimed is:

1. A network system equipped with a first LAN, a second LAN, a separation means and a storage means connected between the first LAN and the second LAN, wherein the separation means separates the first LAN and the second LAN so as not to influence each other, while at the same time controlling accessibility from the first LAN and the second LAN to the storage means.

2. The network system of claim 1, having settings of the separation means changeable so that the second LAN can be accessed from the first LAN.

3. The network system of claim 1 or 2, having the first LAN as a factory-side LAN, and the second LAN as a device-side LAN.

4. The network system of either of claim 1, 2 or 3, having the second LAN connected to the service center supporting the second LAN through a communication line.

5. The network system of either of claim 1, 2, 3, or 4, having the second LAN comprising a manufacturing apparatus, an inspection apparatus, and a charged particle beam apparatus.

ABSTRACT OF THE DISCLOSURE

A device-side LAN 101 comprising a focused ion beam apparatus and a factory-side LAN 109 are mutually separated by separation means 110, whereas a storage device 118 connected to the separation means 110 and storing shared data can be accessed from both the device-side LAN 101 and the factory-side LAN 109.

Also, the device-side LAN 101 is connected to a service center through a dedicated line 120, and the device-side LAN 101 is supported by a remote operation while maintaining confidentiality of the factory-side LAN 109.

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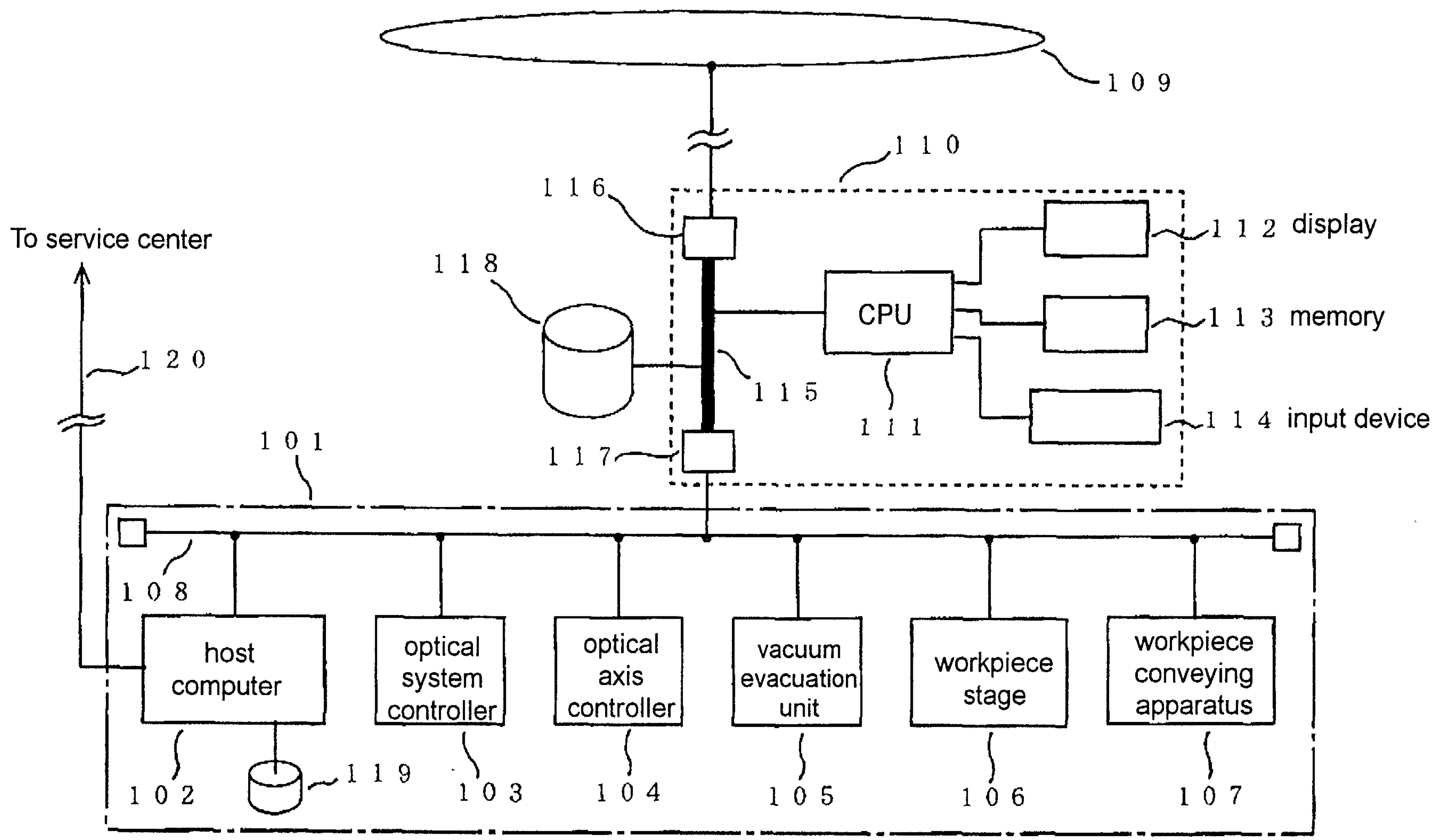


FIG. 1

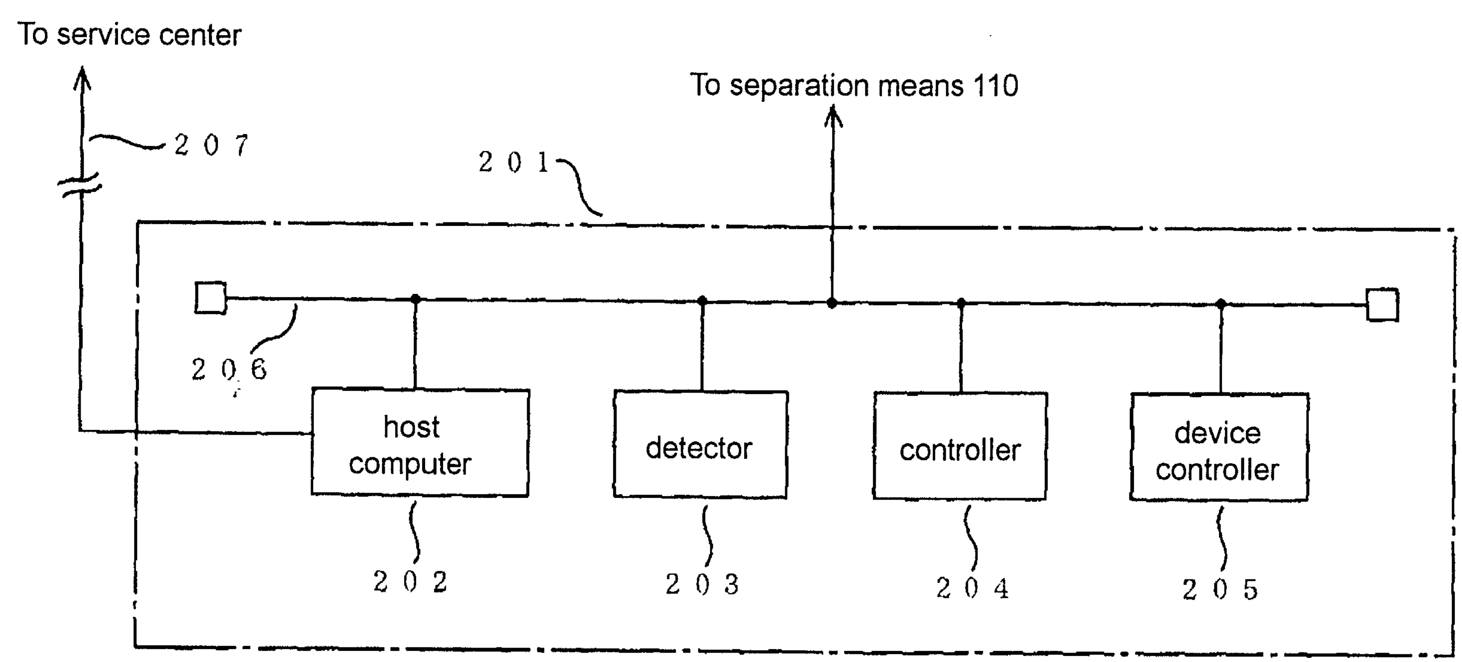
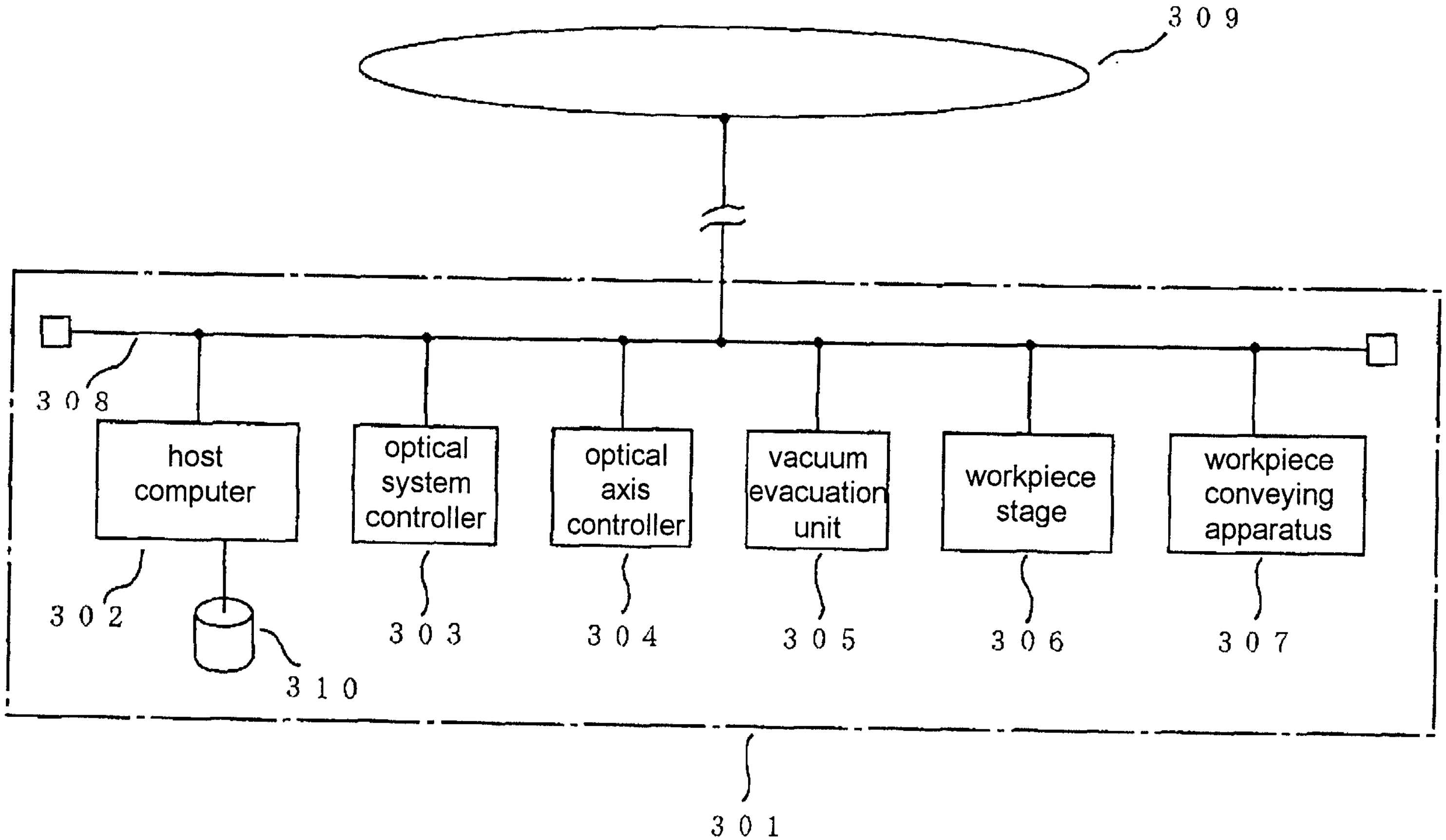

To service center
To separation means 110
207
201
206
host computer
detector
controller
device controller
202
203
204
205

FIG. 2



PRIOR ART

FIG. 3

99-t2v

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled NETWORK SYSTEM as described and claimed in PCT/JP99/06122 filed Nov. 2, 1999, the specification of which (check one); ☐ is attached hereto: ☒ was filed on April 25, 2001 as Application Serial No. 09/830,382 and was amended on (or amended through) ______ (if applicable). I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

(Number)	(Country)	(Day/Month/Year Filed)	Priority Claimed Yes	Priority Claimed No
10-314494	Japan	05/11/1998	☒	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐
			☐	☐

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status - Patented, Pending or Abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY

3

I (we) hereby appoint Bruce L. Adams, Registration No. 25,386, Van C. Wilks, Registration No. 25,027 and Franco S. De Liguori, Registration No. 36,497 whose post office address is: Adams & Wilks, 50 Broadway, 31st Floor, New York, New York 10004, as my (our) attorneys with full power of substitution and revocation, to prosecute this application, and to transact all business in the United States Patent and Trademark Office connected therewith.

100

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2-00

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